# SSR DEGREE AND PG COLLEGE (AUTONOMOUS)
# DEPARTMENT OF BIOTECHNOLOGY
# IMPORTANT QUESTIONS
# PAPER: BIOCHEMISTRY AND MOLECULAR BIOLOGY
# SEMESTER - III

## UNIT – I Biomolecules

**Important Long Answer Questions**

1. Explain In detail About Polysaccharides.
2. Describe Classification Of Proteins
3. Explain the classification of lipids with suitable examples.
4. Define enzymes. Explain enzyme classification

**Important Short Answer Questions**

1. disaccharides
2. Write short notes on phospholipids
3. Differentiate between nucleosides and nucleotides.
4. Define competitive and non-competitive enzyme inhibition.

## Unit II: Fundamentals of Metabolism

**Important Long Answer Questions**

1. Explain About Glycolysis & Its Energetics
2. Describe the Tricarboxylic Acid (TCA) cycle with a neat diagram
3. Explain In Detail About Electron Transport Chain.
4. Describe β-oxidation of fatty acids

**Important Short Answer Questions**

1. Define ATP and explain its importance.
2. Explain the role of the PDH complex.
3. What is gluconeogenesis? Mention its significance.
4. Write a short note on oxidative phosphorylation.

## Unit III: Genome Organization, Replication & Mutations

**Important Long Answer Questions**

1. Explain the experiments that established DNA as genetic material
2. Describe the Watson and Crick model of DNA and explain different forms of DNA (A, B, and Z).
3. Explain DNA replication in prokaryotes
4. Explain DNA Replication In Eukaryotes

**Important Short Answer Questions**

1. euchromatin and heterochromatin.
2. Explain the structure of nucleosomes.
3. mitochondrial genome
4. chloroplast genome.
5. Differentiate between spontaneous and induced mutations.

## Unit IV: Gene Expression & Gene Regulation

**Important Long Answer Questions**

1. Explain Transcription Mechanism In Prokaryotes
2. Explain Transcription Mechanism In Eukaryotes
3. Describe translation in prokaryotes with suitable diagrams.
4. Describe Translation In Eukaryotes With Suitable Diagrams.
5. Explain gene regulation in prokaryotes with the lac operon

**Important Short Answer Questions**

1. Differentiate between prokaryotic and eukaryotic genes.
2. What is the wobble hypothesis?
3. Write a short note on RNA splicing
4. Explain capping and polyadenylation of mRNA.